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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,741	09/06/2006	Shigeru Tanaka	TIP-06-1177	5793

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EXAMINER	
NELSON, MICHAEL B	

ART UNIT	PAPER NUMBER
1798	

NOTIFICATION DATE	DELIVERY MODE
01/06/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pto.phil@dlapiper.com

Office Action Summary	Application No.	Applicant(s)	
	10/584,741	TANAKA ET AL.	
	Examiner	Art Unit	
	MICHAEL B. NELSON	1798	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16-33 and 37-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 16-33, 37-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/21/10 has been entered. Claims 1-14, 16-33, 37-39 are currently under examination on the merits.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-14, 16-33, 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asakura et al. (JP 03 187742), see English language translation, in view of Sadamitsu et al. (WO 02/066233), see U.S. 2004/0096744 as an English language equivalent.

Regarding claims 1-3, Asakura et al. discloses a biaxially oriented thermal transfer recording film (Page 8, last full paragraph and page 10 first full paragraph). The polypropylene containing core layer A (claim 1) of the laminate of Asakura et al. is sandwiched by skin layers, B, and can be further laminated on one side to an anchor substrate with an adhesive layer C (page 13, first full paragraph). The surface of the laminate is disclosed as including an image receiving layer which is made up of a coating (Page 28, "Composition of the image-receiving layer"). This coating is substantially identical to the coating disclosed in the instant specification at [0247] and since Asakura et al. discloses that his invention has high glossiness (Page 14, end of first paragraph) and has substantially the same surface roughness (i.e. less than 0.3 at the top of page 6, as compared to the instant 0.01-0.5), one having ordinary skill would expect the outer surface to exhibit the glossiness as instantly recited. The cushion rate of the laminate is disclosed as being greater than 8% (fourth paragraph on page 9).

Asakura et al. does not explicitly disclose a core layer (i.e. "A" layer) which meets the instant limitations; however, Sadamitsu et al. discloses a biaxially oriented porous (i.e. void containing) film which is improved in strength (i.e. breakage resistance) and thickness

uniformity (See Abstract) and which can be used in synthetic paper ([0112]). The core layer of Sadamitsu et al. is disclosed as containing a polypropylene base, inter alia a polypropylene homopolymer ([0128]), and B-crystallization nucleators which impart B-crystal activity. The Table 1 at page 20 of Sadamitsu et al. shows that for example A the B-crystal ratio of the core layer is 72% and the porosity (i.e. void ratio) is 57%. The voids created in the film of Sadamitsu et al. are a result of the different crystalline states of polypropylene ([0002]) and are therefore non-nucleus voids in that there is no nucleating particle left in the void after it is stretched. Given that the Sadamitsu et al. core layer uses a homo-polypropylene at the same relative amount to the same nucleating agent ([0195]) as in the instant specification (Example 1, [0256]) the core layer would exhibit the claimed melting point.

The inventions of both Asakura et al. and Sadamitsu et al. are drawn to the field of porous polypropylene films for use in thermal transfer films (i.e. synthetic paper) and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the core layer of Asakura et al. by using the porous layer of Sadamitsu et al. for the purposes of imparting increased breakage resistance and thickness uniformity.

Modified Asakura et al. does not explicitly disclose the instantly claimed 2% elongation strengths (F2 value) of the overall laminate however, Sadamitsu discloses that break resistance can be controlled in a biaxially stretched film (See Abstract) and that the resulting longitudinal and transverse direction tensile strengths are around the values of applicant's claimed range (i.e. 50-80 each, [0126]). It would have been obvious to have adjusted the tensile strength of the overall laminate to meet whatever tear resistance was needed in each final application (allowing lower tensile strengths for applications requiring less break resistance).

Regarding claim 8, Asakura et al. discloses a biaxially oriented thermal transfer recording film (Page 8, last full paragraph and page 10 first full paragraph). The polypropylene containing core layer A (claim 1) of the laminate of Asakura et al. is sandwiched by skin layers, B, and can be further laminated on one side to an anchor substrate with an adhesive layer C (page 13, first full paragraph). The surface of the laminate is disclosed as including an image receiving layer which is made up of a coating (Page 28, "Composition of the image-receiving layer"). This coating is substantially identical to the coating disclosed in the instant specification at [0247] and since Asakura et al. discloses that his invention has high glossiness (Page 14, end of first paragraph) and has substantially the same surface roughness (i.e. less than 0.3 at the top of page 6, as compared to the instant 0.01-0.5), one having ordinary skill would expect the outer surface to exhibit the glossiness as instantly recited. The cushion rate of the laminate is disclosed as being greater than 8% (fourth paragraph on page 9).

Asakura et al. does not explicitly disclose a core layer (i.e. "A" layer) which meets the instant limitations; however, Sadamitsu et al. discloses a biaxially oriented porous (i.e. void containing) film which is improved in strength (i.e. breakage resistance) and thickness uniformity (See Abstract) and which can be used in synthetic paper ([0112]). The core layer of Sadamitsu et al. is disclosed as containing a polypropylene base, inter alia a polypropylene homopolymer ([0128]), and B-crystallization nucleators which impart B-crystal activity. The Table 1 at page 20 of Sadamitsu et al. shows that for example A the B-crystal ratio of the core layer is 72% and the porosity (i.e. void ratio) is 57%. The voids created in the film of Sadamitsu et al. are a result of the different crystalline states of polypropylene ([0002]) and are therefore non-nucleus voids in that there is no nucleating particle left in the void after it is stretched.

Given that the Sadamitsu et al. core layer uses a homo-polypropylene at the same relative amount to the same nucleating agent ([0195]) as in the instant specification (Example 1, [0256]) the core layer would exhibit the claimed melting point.

The inventions of both Asakura et al. and Sadamitsu et al. are drawn to the field of porous polypropylene films for use in thermal transfer films (i.e. synthetic paper) and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the core layer of Asakura et al. by using the porous layer of Sadamitsu et al. for the purposes of imparting increased breakage resistance and thickness uniformity.

Modified Asakura et al. does not explicitly disclose the instantly claimed 2% elongation strengths (F2 value) of the overall laminate however, Sadamitsu discloses that break resistance can be controlled in a biaxially stretched film (See Abstract) and that the resulting longitudinal and transverse direction tensile strengths are around the values of applicant's claimed range (i.e. 50-80 each, [0126]). It would have been obvious to have adjusted the tensile strength of the overall laminate to meet whatever tear resistance was needed in each final application (allowing lower tensile strengths for applications requiring less break resistance).

Given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification (i.e. @95% polypropylene and @5% PMP), one having ordinary skill would expect it to exhibit the claimed half crystallization time. The density of the film of Asakura et al. is disclosed as being between 0.75 g/cm^3 or less (Page 9, second full paragraph).

Regarding claims 4 and 19, Asakura et al. discloses that the B skin layers include polypropylene (i.e. a polyolefin) (Embodiments 1 and 2 of Table 1 on the last page). Regarding claims 5, 20, 21, the density of the film of Asakura et al. is disclosed as being between 0.75 g/cm^3 or less (Page 9, second full paragraph). Regarding claims 6, 11, 22, 23, the surface roughness is disclosed as between 0.25 and 0.08 micrometers (Page 10, first full paragraph). Regarding claim 7, 24, 25, regarding the claimed thermal conductivity values, given the substantially similar layers and layer compositions of the film of modified Asakura et al. (i.e. the core layer of Sadamitsu et al. and the skin, adhesive, paper and coating layers of Asakura et al.), having been optimized in stretching and void ratio to achieve the required cushioning factor and tensile strength as stated above, one having ordinary skill in the art would expect the film of the prior art to exhibit these properties.

Regarding claim 9, given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification, one having ordinary skill would expect it to exhibit the claimed crystallization temperature. Regarding claim 10, given that the "B" layer of Asakura et al. (Embodiments 1 and 2 of Table 1 on the last page and "Means of solving the problem" at Page 5) is substantially identical to the B layer composition disclosed at page 98 of the instant specification and given the substantially density, one having ordinary skill would expect it to exhibit the claimed void ratio. Regarding claim 12, 26, 27, titanium dioxide is disclosed for use with the B layer in Asakura (Bottom of Page 12). Regarding claim 13, 28, 29, 30, Asakura discloses achieving optical densities within the claimed range (Table 1, last page). Regarding claim 14, 31, 32, 33, given that Titanium oxide is

disclosed (Bottom of Page 12) and given that the film is disclosed as receiving images, one having ordinary skill would have optimized the whiteness of the film to provide the optimum contrast for any images received thereon. Regarding claim 16, 37, 38, 39, the laminate of modified Asakura is disclosed as including a substrate (receiving layer) on the biaxially stretched white polypropylene film (page 13, first full paragraph and Bottom of Page 12 and Abstract of Sadamitsu). Regarding claims 17 and 18, the laminate is disclosed as being laminated onto a substrate (page 13, first full paragraph) with an adhesive layer, C, which would be the anchor layer and which is comprised of acryl based resins (first full paragraph of page 11).

Response to Arguments

6. Applicant's arguments of 04/21/10 hare considered moot in light of the new grounds of rejection.

7. Applicant argues that tensile strength is not dependent on the porosity of the film. The examiner does not dispute that stretching conditions (which also affect the amount and size of the voids) are not predominately responsible for tensile strength. Even so, Sadamitsu discloses achieving tensile strengths on the same scale as applicant's claimed strengths and therefore it would have been obvious to have adjusted the tensile strength to whatever strengths were required (including the claimed ranges). With regard to applicant's table provided in the remarks, even though cushioning and tensile strength may be independent parameters this would not prevent the prior art from reading on both cushioning rate and tensile strength. Asakura discloses the desire to achieve a high cushioning rate and Sadamitsu discloses that the tensile strengths as claimed can be achieved through optimization based on final application.

8. Applicant then argues that Asakura discloses B crystlals and PMP's. The examiner does not understand the meaning of this paragraph since its syntax seems to be unusual (e.g. "with such as PMPs, and the PMP's exist as nuclei of voids." Regardless it is not clear how PMP, or B crystals, as nucleating agents would prevent the instantly claimed strengths from being achieved.

9. Applicant then argues that the cushioning rate would not be achieved because, as applicant's claim, the cushioning rate is dependent on porosity (presumptively solely on porosity) and one of the examples in a previous declaration shows an example from Sadamitsu with a high porosity but an inadequate cushioning factor. The examiner does not agree that porosity % is the only controlling factor for cushioning rate. The examiner also notes, as was explained in the previous advisory action, that the examples in the declaration use pore sizes (longitudinal and transverse which are outside of the instant range while there are pore sizes in Sadamitsu that overlap the claimed range). The overlap of pore sizes seems to indicate that the film of Sadamitsu would posses the cushioning rate in certain instances. Applicant also argues that while Asakura discloses the benefits of a cushioning factor, this is not for "no nucleus voids." Cushioning factor would be a beneficial property for the end product regardless of what type of nucleating agent was used and therefore one having ordinary skill would have sought to optimize the cushioning rate as called for by Asakura.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Friday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Ortiz can be reached on (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela Ortiz/
Supervisory Patent Examiner, Art Unit 1798

/MN/
11/20/10